

SECTION 7

RISK FACTORS FOR INJURY AND ILLNESS

This section of the report will present data from the Behavioral Risk Factor Surveillance System (BRFSS), using surveys conducted between 1984 and 1994. The BRFSS is a telephone survey of adults 18 years of age and over, using a random digit dialing sampling method. It is conducted each year by the Department of Health Services, in cooperation with the Centers for Disease Control and Prevention, to monitor behavioral risk factors for injury and disease. Answers to the interview questions provide data on behaviors and other factors that can impair health.

For this report, data were grouped across several years to provide a larger base for calculating percentages. Data related to some risk factors are available for some years and not others because the questions that are asked in the phone interviews are changed slightly from year to year.

Eleven risk factors were selected for this report: smoking, chronic alcohol abuse, acute alcohol abuse (binge drinking), failure to use car seat belts regularly, obesity, hypertension, lack of regular exercise, arthritis, lack of health insurance, and failure to receive screening tests for breast cancer (mammogram) and cervical cancer (Pap test). These were selected because they are risk factors for the leading causes of illness and death in women, as follows:

- Smoking: The leading preventable cause of premature death and disease in women, including heart disease (7) and lung cancer (8);
- Alcohol abuse: May shorten the average life span by an estimated 15 years because of its link to serious liver disease as well as to injury accidents and suicide (9). Alcohol use is involved in almost one half of automobile-related deaths and one third of deaths due to drowning and boating accidents (10), and has been identified as a risk factor for development of colorectal cancer (11);
- Not using seat belts: Related to injury and death in automobile collisions;
- Obesity: Leading risk factor for cardiovascular disease (12);
- Hypertension: Leading risk factor for all forms of cardiovascular disease (13);
- Arthritis: Risk factor for falls and institutionalization (14);
- Lack of regular exercise: Risk factor for elevated serum cholesterol (15), obesity, and diabetes (16);
- Failure to receive mammograms and Pap tests: Risk factor for delayed detection of breast and cervical cancer, which increases risk that the condition will be diagnosed too late to be successfully treated (17, 18);
- Lack of Health Care Insurance: Risk factor for inability to obtain timely screening

services (such as mammograms and Pap tests) and medical care (19).

Some of these risk factors are related to each other. We have included tables to show the association of obesity with diagnoses of hypertension, arthritis, and diabetes among California women; how lack of insurance increased the risk of not receiving cancer screening exams; and how alcohol abuse may be related to unsafe automobile usage. The degree of association is expressed as a ratio. For example, if the percent of women with arthritis is 36 among the obese and only 20 among the non-obese, the ratio equals 1.9. It indicates that obesity nearly doubles the risk of arthritis.

Please refer to Appendix D for the frequencies and rates that were used in preparation of the charts presented in this section.

Comparison Between Men and Women

As shown in Table 7.1, there were statistically significant downward trends for both men and women in the percent who smoked and for men in the percent who lacked regular physical exercise. There was a statistically significant upward trend for both men and women in the percent who were obese (See Figure 7.1).

Statistical significance for trend could not be calculated for the remaining risk factors included in this report because data were not available for enough years (a minimum of five time periods are needed). However, as shown in Table 7.1, downward trends were apparent for chronic alcohol abuse and for not wearing seat belts regularly, among both men and women. Among women there appeared to be a decrease in the percent who had never received a mammogram screening exam for breast cancer (over age 50 years). Upward trends were apparent for both men and women in the percent who lacked health insurance. No trend was apparent in the percent of women and men with arthritis nor in the percent of women who never received a Pap test for cervical cancer.

As of 1991-92, males were more likely to smoke (22.7 percent of males compared with 17.7 percent of females) and more likely to abuse alcohol both chronically (7.1 percent of males compared with 1.2 percent of females) and in binge settings (26.3 percent of males compared with 7.8 percent of females). Males were more likely to not use their seat belts regularly (13.6 percent of males compared with 8.7 percent of females) and were somewhat more likely to not have health care insurance (22.9 percent of males compared with 16.1 percent of females). On the other hand, women were more likely to have arthritis (25.7 percent of females compared with 14.9 percent of males) and to not have regular physical exercise (26.1 percent of females compared with 19.6 percent of males). There was little difference between them with respect to the prevalence of obesity (about 22 percent for both genders) and hypertension (19 percent vs. 22 percent).

By 1993-94, about one quarter of the adult population in California was obese. Approximately one fifth still smoked, one fifth still failed to exercise regularly, and approximately one fifth had been diagnosed with hypertension. In short, the prevalence of these risk factors for the leading causes of death (heart disease and cancer) remained relatively high.

Smoking

The reported prevalence of smoking was slightly higher among men than among women between 1984 and 1994. The percent of women who reportedly smoked cigarettes declined from 24.0 percent in 1984-86 to 16.7 percent in 1993-94. As shown in Figure 7.2, the decline was seen in all race/ethnic groups except Native Americans and women not included in the listed race/ethnic groups (Others). In 1984-86, the proportion of women who reported they smoked was higher among whites (25.9 percent) and African Americans (26.4 percent). Despite a downward trend, these two groups continued to have the highest percent of smokers through 1993-94 (18.9 percent and 19.7 percent respectively). The prevalence of smoking reported among Hispanic and Asian women declined from approximately 19 percent in 1984-86 to 8-9 percent in 1993-94.

As shown in Figure 7.3, smoking prevalence declined in all age groups. It was initially highest among women ages 45-54 (33.0 percent) and lowest among seniors (15.6 percent). By 1993-94, it had fallen to 18.1 percent and 13.5 percent among women in these two age groups respectively. Among women of childbearing age (18-44 years) the percentage who smoked declined from 22-26 percent in 1984-86 to under 19 percent in 1993-94.

Acute Alcohol Abuse: Binge Drinking

The prevalence of binge drinking (defined as taking five or more alcoholic drinks on one occasion during the past month, by self report) changed little among women in California between 1984-86 (8.4 percent) and 1991-92 (7.8 percent). Among men the prevalence of binge drinking was three times greater and remained virtually unchanged during this period (25.6 percent in 1984-86, 26.3 percent in 1991-92).

As shown in Figure 7.4, among women the prevalence of reported binge drinking was highest among whites (9.6 percent) and Hispanics (7.8 percent) and half as high among African Americans (2.6 percent) and Asians (3.9 percent). By 1991-92, the latest years for which data were available, these percentages had remained approximately the same among women identified as white, Hispanic, and Asian (9.0, 7.2, and 2.3 percent respectively), but appeared to have increased among African Americans, from 2.6 percent to 7.8 percent. The wide variation in reported prevalence of binge drinking among Native American women is probably due to small sample size. These estimates may not be reliable.

As shown in Figure 7.5, the prevalence of reported binge drinking was highest among women of childbearing age (ages 18-44 years). Fifteen percent of the youngest women (18-24 years) were binge drinkers and the percent was lower for each older age group, reaching 1.3 percent among seniors. This age-related downward trend was statistically significant.

Alcohol Abuse: Chronic

The prevalence of chronic abuse of alcohol (defined as taking 60 or more drinks during the past month, by self report) appeared to be declining among women in California, from 3.7 percent in 1984-86 to 1.2 percent in 1991-92. Among men the prevalence of reported chronic alcohol abuse was four to five times greater, and also declined during this period (from 13.4 percent to 7.1 percent).

Among women, as shown in Figure 7.6, chronic alcohol abuse in 1984-86 was reported most frequently by white women (4.1 percent), followed by Hispanic women (3.8 percent), African

American women (2.1 percent), and Asian women (1.3 percent). By 1991-92, the percent of women who were chronic abusers had declined among these groups to 1.5, 0.9, 1.2, and 0.1 percent respectively. Among Native American women, it appeared that the prevalence of chronic abuse was relatively high (10.7 percent in 1984-86), but the wide range in percentages suggests that the sample of Native American women was too small to provide reliable estimates.

As shown in Figure 7.7, among women of childbearing age the prevalence of chronic alcohol abuse declined from 3.7 percent in 1984-86 to 1.2 percent in 1993-94. Unlike the binge drinking pattern, there was not an age-related trend in the prevalence of chronic alcohol abuse among women.

Failure to Use Seat Belts Regularly

The percent of women who reported that they did not use their automobile seat belts regularly declined four-fold from 1984-86 to 1991-92, from 36.1 percent to 8.7 percent. Among men, this percentage was higher, but also declined sharply during this period, from 43.3 percent to 13.6 percent.

As shown in Figure 7.8, among women this percentage dropped among African Americans from 40.2 to 12.3 percent, among Hispanics it dropped from 40.2 to 11.9 percent, among whites it dropped from 35.8 to 7.8 percent, and among Asians it dropped from 30.1 to 4.9 percent. However, among Native Americans it showed little change, dropping from 12.3 to 10.9 percent.

As shown in Figure 7.9, there was not a significant age-related trend in the prevalence of not using seat belts.

Association Between Binge Drinking and Use of Automobile

Driving while intoxicated was reported 8.5 times more frequently by women who engaged in binge drinking than by women who did not (10.8 percent among binge drinkers, compared with 0.6 percent among others). Similarly, failing to use seat belts regularly was reported 1.6 times more frequently by women who engaged in binge drinking than by women who did not (16.7 percent among binge drinkers compared with 0.9 percent among others).

Obesity

Obesity was defined as Body Mass Index (weight in kilograms / height in meters²) of 27.3 or greater for women and 27.8 or greater for men. The prevalence of obesity in both men and women showed a clear upward trend during the past decade. The percent of women who were obese increased from 15.7 percent in 1984-86 to nearly a quarter of the adult females (24.2 percent) by 1993-94. Among men the prevalence of obesity was comparable to that in women and there was a similar increase in prevalence during this period, from 17.4 percent to 26.9 percent.

As shown in Figure 7.10, the prevalence of obesity was higher among African American women, (increasing from 25.4 percent to 41.4 percent) than among Hispanics (increasing from 19.4 percent to 29.2 percent) and whites (13.9 percent to 22.2 percent). It was lowest among Asian women and increased slightly (from 5.7 percent to 8.2 percent). The percent of Native American women with body mass in the obese range may be quite high, but estimates based on this small

sample size are not reliable.

As shown in Figure 7.11, the prevalence of obesity was highest for women ages 45-54 and 55-64. Their risk of obesity remained highest throughout the period covered by this report although there was not a significant trend, either upward or downward, in this risk. In the other age groups the risk of obesity was lower, but it increased significantly. Obesity was least prevalent in the youngest group (18-24), among whom it rose significantly, from only 7.6 percent in 1984-86 to 10.9 percent in 1993-94. Among women ages 25-34 it increased significantly, from 10.6 to 17.4 percent and among women ages 35-44 it increased significantly, from 17.1 to 27.8 percent. In the oldest age group (65+), the prevalence of obesity increased significantly, from 20.5 to 26.8 percent.

Hypertension

The reported prevalence of medically diagnosed hypertension was almost identical in women and men (21 percent) and remained virtually unchanged between 1984-86 and 1993-94.

As shown in Figure 7.12, the prevalence of medically diagnosed hypertension in women in 1984-86 was highest among African Americans (28.2 percent), followed by whites (23.0 percent), Hispanics (19.9 percent), then Asians (9.7 percent) and Native Americans (9.0 percent). Between 1984-86 and 1993-94, the prevalence of hypertension increased significantly among African Americans (from 28.2 percent to 34 percent) and Native Americans (from 9.0 percent to 28 percent).

The prevalence of hypertension in women increased with age, as shown in Figure 7.13. This age-related trend was statistically significant. However, there was no significant change between 1984 and 1994 in the percentage of women with hypertension in any age group.

Lack of Exercise

The percent of California adults who reported that they did not engage in regular physical exercise was slightly greater among women than among men. There was a downward trend in failure to exercise among males (from 25.5 to 18.1 percent) and females (from 29.7 to 21.9 percent), but it was significant only for males. Despite the decline, about one fifth of both men and women still lacked the benefits of regular exercise.

As shown in Figure 7.14, between 1984 and 1994, the percent of white women who did not take part in regular physical exercise appeared to decline steadily and significantly, from 25.7 percent to 16.1 percent. Among African Americans it declined steadily, from 31.4 to 26.1 percent, but the trend was not statistically significant. Among the remaining groups there was no overall pattern of increase or decrease: the percentage of women who lacked regular exercise varied between 31.4 and 41.2 percent among Hispanics, between 23.2 and 47.0 percent for Asians, and varied between 7.5 and 24.4 percent for Native Americans.

As shown in Figure 7.15, at the beginning of this study period (1984-86) the percent of women who reported that they did not have regular physical exercise was lowest for women ages 18-24 (22.7 percent), and was higher for each successive age group, reaching 37.8 percent in women age 65+. This age-related trend was statistically significant. By 1993-94, the percent of each age group lacking regular exercise was lower than at the beginning, although the downward trend

was not significant for any group. At the end of the study period the age-related trend was not significant either.

Arthritis

The prevalence of self-reported arthritis during the period 1984 to 1994 varied between 22 and 25 percent among women and varied between 13 percent and 15 percent among men. As shown in Figure 7.16, by 1991-92 the percentage was higher among whites (28.9 percent) and African Americans (28.8 percent) compared with Asians (19.8 percent), Native Americans (18.3 percent), and Hispanics (16.3 percent).

There was a significant association between arthritis and age, as shown in Figure 7.17. In 1991-92 the percentage of women who reported having arthritis was only 3.3 percent for women ages 18-24 and increased to 64.0 percent among women age 65+.

Association Between Obesity and Other High Risk Conditions

Women who were obese were two to three times more likely to have several high risk conditions. Compared with other women, the obese were 2.7 times more likely to be diabetic (11.3 of the obese compared with 3.0 percent among the non-obese), 2.3 times more likely to have hypertension (38.2 of the obese compared with 16.9 percent among the non-obese), and 1.9 times more likely to have arthritis (35.7 of the obese compared with 19.1 percent among the non-obese).

Screening Exams: Mammograms

Among women over age 50 there appears to have been a decline between 1987 and 1994 in the percent who reported never receiving a screening mammogram to detect breast cancer, in all race/ethnic groups (Figure 7.18). As of 1993-94 it was higher among Native American women (40.7 percent) and Hispanic women (24.7 percent), compared with whites (12.7 percent), African Americans (11.3 percent), and Asians (15.4 percent).

As shown in Figure 7.19, the percent of women who had never had a mammogram declined among women ages 45 years and older, for whom baseline and periodic exams are recommended, with the greatest decline seen among seniors (from 44.8 percent to 14.4 percent). There was even a decline among younger women (35-44 years old) in the percent who never received a mammogram, from 50.7 percent to 32.5 percent.

Screening Exams: Pap Tests

As shown in Figure 7.20, the percentage of women who reported never receiving a Pap screening exam to detect cervical cancer remained below 4 percent for white and African American women. However, this percent was two to three times greater, and even increased, during this period among Asians (17 .0 percent to 20.9 percent) and Hispanics (12.1 percent to 14.1 percent). The percentages reported for Native Americans may not be reliable due to small sample size.

As shown in Figure 7.21, the percentage of women who had never received a Pap test was almost five times higher among the youngest women (25 percent in 1993-94) compared with the

older age groups (2.0 to 6.3 percent in 1993-94).

Lack of Health Insurance

In California, between 1989 and 1994, the percentage of adults who reported not having health care insurance was increasing and was slightly higher for men (rising from 15.5 percent to 19.8 percent) than for women (rising from 12.7 percent to 16.5 percent).

As shown in Figure 7.22, among women this percent was over twice as high for Hispanic women (reaching 36.8 percent in 1993-94) compared with Asians (16.4 percent), African Americans (12.8 percent), and whites (10.2 percent). Among Native Americans this percentage may have been as high as 25 percent, but the samples were too small to permit reliable estimation of insurance coverage in that group.

As shown in Figure 7.23, the percent of women who reported that they had no health insurance was highest among the youngest women and it declined with age. By the end of the period covered by the report, there was a significant age-related trend, with the youngest women most at risk for not having health insurance. Between 1984 and 1994, the percent who were uninsured increased about 40 percent among women ages 18-24 (from 20.7 to 29.1 percent) and ages 25-34 (from 15.9 to 22.9 percent). During this time it increased about 20 percent for women ages 35-44 and over 70 percent for women ages 45-54. It remained unchanged for women ages 55-64 (about 13 percent). It remained very low among women age 65+ (1 percent or less).

Association Between Health Insurance Coverage and Cancer Screening Exams

Women without health insurance were almost three times more likely to have never received important cancer screening tests. Uninsured women were 2.8 times more likely to have never received a Pap test (21.8 among the uninsured compared with 7.4 percent among the insured). Among women over age 50 years, the uninsured were 1.8 times more likely to have never received a mammogram (47.7 among the uninsured compared with 28.0 percent among the insured).

Summary of Risk Factors

Men were more likely than women to smoke cigarettes, to use alcohol, to not use their seat belts, and to not have health insurance. Women were more likely to have little or no regular physical exercise and to have arthritis. Men and women were about equally likely to be obese and hypertensive.

The prevalence of smoking decreased significantly for both males and females and the percent who reported body weight in the obese range increased significantly for both. The percent of adults who reported little or no exercise decreased in both males and females, but the downward trend was significant only among males.

At the beginning of the time period covered by this report, the risk factor with the highest prevalence among women was never having had a mammogram (61.7 percent of women over age 50 in 1987-88). The other leading health risk factors (in 1984-86) were: irregular seat belt use (36.1 percent), lack of exercise (29.7 percent), and smoking (24.0 percent). By the end of the period, never having had a mammogram remained the risk factor with the highest prevalence

(42.2 percent), followed by lack of exercise (21.9 percent) and obesity (24.2 percent).

As of 1993-94, white women had the highest levels of alcohol abuse (both binge and chronic drinking) and arthritis, compared with women in the other race/ethnic groups, and an elevated prevalence of smoking as well. Among African American women there was elevated prevalence of smoking, binge and chronic alcohol abuse, obesity, hypertension, and not using seat belts. Among Hispanic women there was an elevated risk of not using seat belts, not getting regular exercise, obesity, and never having received a mammogram or a Pap test. They were the group most likely to not have health insurance. Native American women had a similar pattern of risk to the Hispanics: they had higher levels of obesity and hypertension, smoking, never having had a mammogram or Pap test, and not having health insurance. Asian women had the highest percentage reporting never having had a Pap test, despite the fact that only a small percent lacked health insurance.

The prevalence of both hypertension and arthritis increased significantly with increasing age. The oldest women (age 65+) were most likely to have these conditions. In contrast, risk of binge drinking and not having health insurance both decreased significantly with age. It was the youngest women (18-24) who were most at risk. For lack of physical exercise there was a significant age-related trend at the beginning of the study period (1984-86), with older women most at risk. By the end of the study period, there no longer was a significant age trend because the percentage who did not exercise had dropped faster among older women than among younger women. For the remaining risk factors reported here, there was no age-related trend.